

## PADDLE HAND GRIPS AND METHOD FOR MAKING AND USING SAME

This application claims priority under 35 U.S.C. §119(e) from provisional patent application serial number 60/409,678 filed on September 10, 2002 and provisional patent application serial number 60/421,621, filed on October 28, 2002, both of which are incorporated herein by reference, in their entirety.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates to articles for making gripping of a shaft more comfortable. In particular, it relates to hand grips that serve to make the use of a shaft, such as that of an oar or paddle more comfortable and efficient, and which assist people with hand and wrist disabilities in paddling. More particularly, it relates to hand or comfort grips which may be applied to the shaft of an oar or paddle used with kayaks, canoes and human powered watercraft.

#### 2. Prior Art

An oar or paddle for use with kayak, canoe and human powered watercraft, is compromised of an elongate shaft having a first end and a second end, at least one end of the shaft having a blade attached thereto.

The conventional method of paddling a kayak watercraft is to hold the paddle with both hands grasping the shaft of the paddle somewhere parallel to the paddler's or rower's shoulders, and dip the paddle in and out of the water to

one side and then to the other. This motion causes significant friction between the shaft and hands during the paddling motion which causes blistering and calluses on the first web space and skin on the inside palms of the hands. Furthermore, this grasp on the paddle contributes to contusions (bruising) to the underlying metacarpal bones of the hand and phalanx bones of the fingers. Significant strain to the corresponding carpal tunnel area and tendons of the wrist are incurred with the force needed to firmly grasp and hold the smooth hard shaft of the paddle.

Efficiency of the paddling motion is reduced since a portion of the energy applied to the stroke of the paddling motion is lost in the slipping of the grasp.

People with disabilities of the hand and wrist (for example carpal tunnel syndrome, tendon injuries and arthritis) would be unable or too uncomfortable to hold a tight grip on the smooth hard shaft of the paddle.

#### SUMMARY OF THE INVENTION

The present invention overcome at least in part some of the aforementioned disadvantages.

It is an object of the invention to provide a hand grip that enables a user to comfortably grip a shaft.

It is a further object of the invention to provide a hand grip that is easily installed on a shaft.

It is another object of the invention to provide a method for making such a hand grip.

It is still another object of the invention to provide a method for installing such a hand grip onto a shaft.

5 In accordance with the first aspect of the present invention there is provided two separate and independent comfort hand grips for use with a kayak, canoe or similar watercraft paddle. The comfort hand grip may be attached by the (user) (paddler) in the case of "take apart"  
10 types of paddles by sliding one comfort hand grip over each side of the paddle shaft into a position applicable to the (user) (paddler). With paddles that do not separate in the middle, each comfort grip may be supplied with a lengthwise cut or slit (to allow fitting over the  
15 elongate shaft), die cut vertical holes on each side of the comfort grips, and a lace to be used to secure the two ends together in a pattern similar to lacing shoes.

Furthermore, these comfort grips are manufactured with  
20 die cut closed cell rubber material in a predetermined thickness. This material will not absorb water to add weight to the grip which would be detrimental to the intended use. Additionally, the closed cell rubber material may be fused on one side with nylon material to  
25 add UV (ultraviolet) protection and extended useful life, and may be manufactured with an ingrained texture on the opposite side to add gripping ability, decrease slippage of grip and increase paddling efficiency, provide a soft feel, ease of installation on the paddle and a desired

color (including colors for water safety), for the end user.

5 In accordance with the invention a comfort grip for a shaft comprises a tubular member formed of a closed cell resilient polymer material core; and a water resistant coating on a first side of the core. A textured layer or surface may be provided on a second side of said core. The comfort is sized so as to be slightly stretched when  
10 positioned on a shaft. The resilient polymer core is formed of a rubber. The coating is formed of an ultraviolet resistant flexible material, such as a nylon.

The comfort grip may be initially in the form of a rectangular piece of material, comprising joining  
15 portions along two opposite sides of the rectangular piece, the joining portions being connected to form the tubular member.

Connecting means for connecting the joining portions may comprise at least one of stitching along edges of the  
20 sides to connect the joining portions; a lace disposed in the in the joining portions; a zipper having a side along each of the joining portions; and a set of hooks and loop closures on opposite ones of the joining portions. Other connecting or fastening means such as adhesives, staples,  
25 or other fasteners may also be used.

The comfort grip may further comprise end bands at ends of the tubular members. The end bands preferable comprise a stretchable material folded so as to have a first portion along an inner periphery of the tubular

member and a second portion along an outer periphery of the tubular member.

5 The comfort grip is used, preferably, in combination with a shaft, the shaft being that of an oar or paddle that is configured for use in rowing. A second comfort grip may be placed on the shaft, with the comfort grips being positioned on the shaft so that each hand of a user may grip one of the comfort grips during rowing.

10 Also in accordance with the invention, a method for forming a comfort grip for a shaft, comprises providing a rectangular piece of stretchable material; and connecting two opposite sides of the rectangular piece of material to from a tubular member, the tubular member being sized so as to stretch around the shaft when a portion of the shaft is disposed within the tubular member.

15 The connecting is done by providing at least one of stitching which joins the opposite sides to one another; a lace through openings in portions of the material along the sides; a zipper having a side along each of the joining portions; and a set of hook and loop closures on opposite ones of the joining portions.

The method may further comprise providing end bands formed of a stretchable material along ends of the tubular member.

25 Providing the end bands may comprise positioning the bands with a first portion along an inner periphery of the tubular member and a second portion along an outer periphery of the tubular member; and fastening the end

bands in place. The end bands may be positioned by sewing the end bands to the tubular member.

5 The invention is also directed to a method for placing a comfort grip on a shaft comprising providing a comfort grip including a tubular member formed of a closed cell resilient polymer material core, and a water resistant coating on each side of the core; and placing the comfort grip on the shaft by at least one of sliding the comfort grip onto the shaft; lacing the comfort grip to the shaft with a lace extending through opening in the tubular member; closing a zipper, the zipper having a side along each of the joining portions; and closing a set of hook and loop closures on opposite ones of the joining portions.

#### 15 BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing aspects and other features of the present invention are explained in the following description, taken in connection with the accompanying drawings, wherein like numerals indicate like elements, and  
20 wherein:

Fig. 1 is a perspective view showing two articles of manufacture in accordance with the invention in place, for use, on a paddle.

25 Fig. 2A is a plan view of a first embodiment of the invention.

Fig. 2B is a cross sectional view of the embodiment of Fig. 2A taken along line 2B-2B thereof.

Fig. 3A is a plan view of a second embodiment of the invention.

Fig. 3B is a cross sectional view of the embodiment of Fig. 3A taken along line 3B-3B thereof.

5 Fig. 4A is a plan view of a third embodiment of the invention.

Fig. 4B is a cross sectional view of the embodiment of Fig. 4A taken along line 4B-4B thereof.

10 Fig. 5A is a plan view of a fourth embodiment of the invention.

Fig. 5B is a cross sectional view of the embodiment of Fig. 5A taken along line 5B-5B thereof.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

15 Referring to Fig. 1, there is shown a perspective view of comfort hand grips 10 (hereinafter also referred to as a grip or grips 10) incorporating features of the present invention, in place on the shaft 12 of an oar 14 having paddle blades 16 and 18 at respective ends thereof. The oar is used by a person 20 who is rowing, for example, a  
20 small boat 22, such as a kayak.

Although the present invention will be described with reference to the embodiments shown in the drawings, it should be understood that the present invention can be embodied in many alternate forms of embodiments. In  
25 addition, any suitable size, shape or type of elements or materials could be used. In addition, although the comfort grips of the present invention are shown on the

shaft of an oar or paddle, it will be understood that they may be used on shafts of many kinds, including for example, the shaft of a baseball bat, or any other shaft that may cause discomfort when gripped.

5 Referring to Fig 2A and 2B, the comfort hand grips 10 in accordance with the invention are formed by providing a generally rectangular piece of preferably die cut material having a core layer 30, formed of a closed cell elastic material, such as a neoprene rubber. A  
10 manufactured ingrained textured layer or surface 32 and a nylon outer layer 34 may be fused to the inner and outer surfaces, respectively, of the core layer 30 before die cutting. The nylon is water impervious and may be resistant to ultraviolet radiation, thus preventing the  
15 accumulation of water by the core layer 30 and protecting the core layer 30 from degradation when used in an outdoor environment. The material may have a thickness of approximately 5 millimeters.

The rectangular piece may be formed into a tubular  
20 structure, having an elongate shaft receiving opening 35, by connecting two opposite sides together by, for example, a stitching 36. End bands 38 and 40, consisting of generally rectangular pieces of an elastic or stretchable material are each disposed to have a portion  
25 disposed on the outside surface of grip 10 (on outer layer 34), and a similarly shaped portion disposed on the inside surface (on inner layer 32) of hand grip 10. Respective stitchings 42 and 44 secure end bands 38 and 40 in place at opposite ends of grip 10, thus covering  
30 the die cut ends thereof and assuring a neat appearance.



It is noted that for simplicity and ease of illustration, stitching, and other connection means, are generally not shown in the cross-sectional views herein.

Grips 10 may be 4 inches to 8 inches in length, but are preferably 6 inches in length. Opening 35 is large enough to receive a shaft when the material of grip 10 is stretched by the insertion of the shaft therein. Typically opening 35 will have a diameter of approximately 0.875 inches when not stretched, so as to accommodate a shaft of approximately 1.0 inch diameter when grip 10 is stretched around the shaft.

This first embodiment of the invention illustrated in Fig. 2A and Fig. 2B has particular application to the case where the paddle or oar of Fig. 1 may be disassembled at a central portion along its shaft 12. In the disassembled configuration, water may be applied to the shaft and to the inner surface of the grip 10. The grip may then be forced to slide down the shaft to a desired position.

Referring to Fig. 3A and Fig. 3B, in this second embodiment of the invention, the tubular structure of the grip 10A is established by the use of a lace 50, threaded through a series of die cut holes 52. This structure is similar to that of the first embodiment, and will thus not be described in detail. However, the use of a lace permits grip 10A to be assembled on to the shaft of an oar or paddle that does not come apart, so that there is no difficulty with respect to the size of the blades preventing insertion of the shaft. The rectangular piece of material from which grip 10A is formed, is simply

wrapped around the shaft, and then the lace is threaded and tied into a knot or bow 54.

Referring to Fig. 4A and Fig. 4B, in a third embodiment of the invention, the tubular structure of grip 10B is  
5 formed by using hook and loop fasteners, of a type well known in the art. This embodiment may be used with oars or paddles which have shafts that disassemble and shafts that do not disassemble. The material is stretched to allow the hook and loop fasteners to be closed. There is  
10 an overlap of the sides which are connected to form the tubular structure as shown in Fig. 4A.

Referring to Fig. 5A and Fig. 5B, in another embodiment of the invention, a zipper 70, having a first side 72 attached to a first connecting portion and a second side  
15 74 attached to a second connecting portion of the material of grip 10C, has a zipper closure 76, with a zipper pull 78 extending therefrom. This embodiment may be used with oars or paddles which have shafts that disassemble and shafts that do not disassemble. The  
20 material is stretched when the zipper is closed.

It is noted that more than one of the connecting means that are illustrated in the various embodiments may be used together. For example, hook and loop fasteners may be used in combination with a lace or with a zipper.  
25 Thus, at least one, but in the general case, more than one may be used in a single embodiment of a hand grip in accordance with the invention. If an adhesive or staples are used, there will be some overlap of the joining portions of the material that makes up the hand grip.

It should be understood that the foregoing description is only illustrative of the invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the invention. Accordingly,  
5 the present invention is intended to embrace all such alternatives, modifications and variances which fall within the scope of the appended claims.